

# Global Health: Asia in the 21st Century

Join us Fridays through April 3 for a five-part series as we take you around the world highlighting global health issues. (There will be no series publication on March 20.)

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## War and Health: Agent Orange in Vietnam

By Diane Niblack Fox

The health effects of war continue long after the last bomb is dropped and the last soldier returns to civilian life. The long-lasting effects of Agent Orange in Vietnam are an example. Though the war there ended 35 years ago, adults are still debilitated by disease and children by birth defects.

What was Agent Orange? Although the term is sometimes used as a metaphor for the long-term consequences of war, strictly speaking, it was an herbicide made of two chemical compounds (2,4-D and 2,4,5-T) that was used to make leaves fall from trees in order to deprive the enemy of hiding places. The deadliest part of the mixture came from another chemical that was a by-product of its manufacturing process: TCDD dioxin, which has been called the most toxic man-made chemical.

### Vast deforestation

The immediate effect of these chemicals was to strip vast areas of Vietnam of vegetation. Roughly 15% of what was then known as South Vietnam was defoliated: a quarter of the upland forests and a third to half of the saltwater mangrove forests. In certain provinces, half of the vegetation was destroyed. The total area devastated was equivalent in size to the state of Connecticut. Today, about a million acres remain barren or covered in a tough grass



National Archives

A UH-1D helicopter from the 336th Aviation Company sprays a defoliation agent in the Mekong delta. (July 26, 1969)

that prevents farming and the regrowth of forests. This loss of livelihood for farmers and foresters entails its own health problems, through malnutrition and an inability to pay for medical care.

### Effects on people

People exposed to the spray of these chemicals experienced nausea, coughing and dizziness. At the time, the long-term effects were little understood, though people in some sprayed regions reported an unusual number of spontaneous abortions, and 5,000 American scientists (including 17 Nobel laureates) called on the U.S. government to stop spraying, concerned that we did not understand the long-term implications of our actions. The spraying was finally stopped in 1971, after 21 million gallons had been sprayed over 10 years.

As time passed, our knowledge grew. Though we still have more to learn, today major world health and environmental bodies recognize the health hazards of the chemicals used in Vietnam. The International Agency for Research on

Cancer (part of the World Health Organization) recognizes TCDD as a “known human carcinogen.” The U.S. Environmental Protection Agency (EPA) says TCDD is thought to be linked in adults to “cardiovascular disease, diabetes, cancer, nerve and skin disorders, decreased

testosterone and endometriosis.” In fetuses and young children, the EPA says TCDD is thought to be linked to effects on the development of the thyroid, the immune system, neurobehavior, cognition and dentition (the development and cutting of teeth).

Six countries around the world (the United States, Vietnam, Australia, New Zealand, South Korea and Canada) now compensate their veterans who were exposed to Agent Orange and dioxin, whether in combat in Vietnam or in the manufacture and storage of the product elsewhere.

In Vietnam, the health consequences affect not only veterans but also the particularly vulnerable: pregnant women, nursing mothers and young children who lived in areas that were sprayed. An estimated three to five million people lived in these sprayed areas; the Red Cross estimates that several hundred thousand of them have diseases linked to TCDD exposure. Adults suffer many of the illnesses listed above, and children suffer birth defects.

### The health threat continues

In a few heavily contaminated hot spots in Vietnam, the threat of new exposure to TCDD continues. These areas are around the perimeters of former military bases, which were heavily and repeatedly sprayed, or on bases where the chemicals were stored, transferred and sometimes spilled. The soil on one such base has shown TCDD levels 365 times higher than the level accepted as safe by the World Health Organization. Work is underway to identify and cordon off such areas to prevent ongoing exposure to people living on these grounds. Nearly 40 years after the spraying stopped, much still remains to be done.

### Next Week:

*Workplace Exposure and Cancer in Shanghai Textile Workers*

## EXPAND YOUR WORLD

- 1) Why did the U.S. government spray millions of tons of the toxic herbicide Agent Orange over the Vietnamese jungle?
- 2) List the effects of Agent Orange in Vietnam?
- 3) Brainstorm ways the U.S. and Vietnam could work together to create change for the people and land of Vietnam that have been affected by Agent Orange?



We're pleased to join The Henry M. Jackson School of International Studies in bringing you the five-part series “Global Health: Asia in the 21st Century.” Each week we'll highlight an emerging health issue and offer students an opportunity to explore it further through discussion questions. For more information, please visit <http://jis.washington.edu/earc>.

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